

**Stakeholder Meeting
Atlanta, GA – May 31, 2007**

Meeting Summary

Background

The Coastal Zone Management Act (CZMA) of 1972 created a unique partnership between federal and state governments with the goal of balancing the conservation of coastal and Great Lakes environments with the responsible development of economic and cultural resources. Pending reauthorization of the CZMA has prompted discussion within the coastal community on ways to improve coastal management in the US. In response, the Office of Ocean and Coastal Resources Management of National Oceanic and Atmospheric Administration (NOAA) and the Coastal States Organization (CSO) have undertaken a project to engage coastal managers and stakeholders to envision the future of coastal management. The goal of this process is to gather feedback on priority issues and innovative ideas for improving the CZMA and the National Coast Management Program. The final outcome will be a set of core principles, a suite of options for revising the CZMA, and suggestions for other techniques that NOAA and the states may consider implementing for improved coastal management.

Introduction

This Atlanta, GA meeting was the third in a series of five nation-wide meetings being conducted under the initiative titled *Envisioning the Future of Coastal Management*. David Kennedy and Ralph Cantral of the National Oceanic and Atmospheric Administration (NOAA) and Kacky Andrews of the Coastal States Organization (CSO) opened the meeting with a joint presentation on the initiative. The meeting was attended by 64 participants representing a broad range of stakeholders including government, homebuilders, conservation, municipal associations, energy, and research. After the opening presentation, participants broke out into small groups to address the following topics: coastal hazards; land use; water quality; intergovernmental and interagency coordination; waterfront revitalization; climate change; and habitat.

Breakout Groups: New, Creative, Forward-looking Strategies and Solutions

In each breakout group, participants briefly discussed obstacles. The obstacles to effective coastal management that spanned all the topics were:

- Geography (coasts extend inland; political boundaries versus resource boundaries);
- Multiple Governments & Agencies (need for coordination among Federal agencies, between levels of government, within regions);
- Technical Complexity (issues require special knowledge, lack of sufficient data, maps);
- Funding Needs; and
- Competing interests (multiple users, achieving balance, and setting priorities).

The participants then spent the day generating creative solutions for managing the coasts and/or improving the CZMA. The following meeting summary highlights each breakout discussion, including featured solutions and other obstacles specific to each topic. When there was more than one breakout group on the same topic, ideas from all the relevant groups are listed together.

Next Steps

All the ideas generated by meeting participants will be reviewed and considered by NOAA and CSO as they develop their proposed changes to the Coastal Zone Management Act. CSO and NOAA thank all the participants for their thoughtful input and time.

COASTAL HAZARDS

OBSTACLES

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| Education and Values | <ul style="list-style-type: none"> • Programs which manage resources are putting individual rights above the value of the “common good.” |
| Frequency | <ul style="list-style-type: none"> • The infrequency of hazards and willingness of the federal government to provide post-storm financial support creates few incentives for daily issues and decision-making to consider hazards. |

BRAINSTORMED SOLUTIONS

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| Incentives for Protecting Critical Areas | <ul style="list-style-type: none"> • Provide better incentives (i.e. regulatory and financial mechanisms, environmental service payments, mitigation opportunities) to protect critical natural areas with a focus on ecosystem-based management. • Coordinate all state and federal programs to ensure incentives don’t cancel others out. Think about “net incentives.” • Better quantify/demonstrate the value of natural resources, including their value to society. Consider existing and lost resources in the valuation. • Strengthen regulatory incentives such as the Clean Water Act Section 404. • Provide funding for preserving open space or habitat buyout programs, for example the Stafford Act or the Coastal and Estuarine Land Conservation Program (CELCP). • Define what “good” behavior with regards to mitigating coastal hazards is and then reward it. • The outcome successful incentive programs to mitigate coastal hazards would be healthier natural systems with fewer recovery costs, less damage to personal property, fewer human resources needed, and protected natural ecosystems. • Obstacles to implementing a successful incentive program includes rapidly increasing cost of coastal property, Federal Emergency Management Agency insurance funding, and the need for education on the importance of protecting critical habitat. • Map and identify key natural areas to be protected, aiming for consistency across regions. • The Federal Emergency Management Agency’s “Project Impact” is an example of some incentives and much partnership. Others are the No Adverse Impact program by the Association of State Floodplain Managers in which they discourage actions that negatively impact downstream pieces of land and NOAA’s Environmental Sensitivity Index Mapping Program, a tool developed to respond man-made hazards, but still relevant. |
| Expand Coastal Zone Management (CZM) | <ul style="list-style-type: none"> • Expand CZM to encompass all coastal programs, including the Federal Highway Administration and State Departments of Transportation, to allow better planning to minimize risk from natural hazards. • Under the CZMA there is a disconnect between land use and transportation policies. This makes it difficult to plan for the use and protection of coastal resources. • The Clean Air Act links transportation funding to air quality funding, and coastal management needs something analogous. • There needs to be a mandate in CZMA re-authorization to require federal agencies to coordinate activities. Create a federal/state framework that would better support local planning, and articulate priorities and goals to help drive local decision-making. • The outcomes of expanding CZM might include limited macro-infrastructure in high hazard areas, designing new development around compatibility with natural resources and sustainability, and better comprehensive planning for access and use for visitors and residents. • Obstacles expanding CZM and requiring agencies to coordinate activities includes the lack of one venue where different agencies work together, and varying values among different agencies and among states and territories. • Next steps might include having a neutral group conduct a cost/benefit analysis to identify disconnects among federal programs with coastal jurisdiction; review problems of 6217; and develop an incentive element in CZMA such as in the Clean Air Act, where funding is lost by non-compliance. • A mandate at the federal level for federal agencies to coordinate should be the priority. |
| Increase Linkages Between | <ul style="list-style-type: none"> • Data gathered in academia is often not useful for planning and management. Ensure that good information becomes useful in decision-making, and accommodate/plan for the high |

Researchers and Users

- turnover in local offices when developing, and sharing information.
- Require researchers to partner with decision-makers to receive funding and that research be based on needs identified by user groups. Bring the coastal community and researchers to an annual conference linking research and coastal protection.
- The CZMA should drive coastal research funding and provide coordination among research efforts. Provide an information clearinghouse so people can find and use the information. Coastal Zone Managers could be facilitators or translators of research.
- New Orleans is a good example on linking managers and researchers around hazards.
- The outcome of improved linkages would be an increase awareness, and more funding for applied research, such as on the effectiveness of low-impact technologies.
- Need to standardize data formatting for ease of use.
- The CZMA should drive the integration of science at different levels government and review funding sources.
- A good example of linking science to users is in Mississippi, where experts came in after hurricanes to map issues and redevelopment plans at a symposium. Also, in the work of the, University of South Carolina Sea Grant, and Georgia's Environmental Protection Division, which has a partnership with the University of Georgia for the Altamaha River Basin Project linking students and research groups to identify and meet local government needs for local watersheds. The Georgia Coastal Research Council addresses user needs and provides rapid response to those needs, and NOAA's cooperative institutes (like the Dauphin Island Sea Lab) work with users as well.
- Central to better linking research to user needs is good communication and cooperation between governmental bodies at all levels and funders, and providing incentives (time or resources) for researchers and managers to ensure that connections are maintained (interactive engagement, adaptive research).

LAND USE

OBSTACLES

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| Ethics/Awareness | <ul style="list-style-type: none">• Stewardship ethic not strong.• The lag time between land use decisions and impacts.• Inadequate community involvement/awareness of local decisions. |
| Technical Data & Tools | <ul style="list-style-type: none">• Need better information about the effect of tourism and other economic issues.• Need a way to identify and forecast ecosystem impairment quickly.• We don't know how to effectively mobilize our communities to help and demand the protection of habitat |
| Governance | <ul style="list-style-type: none">• Lack of holistic thinking – need to approach development systematically, rather than project-by-project. No overall holistic coastal management truly happening now.• Multiple governments/lack of uniform authority – state and local authority varies, and many items fall between the cracks. Too many agencies with conflicting mandates. Coordination and collaboration are essential on land use issues.• Lack of authority and mandate to plan comprehensively.• Land use plans don't take water use into account (water quality for drinking, recreational uses like boating and surface water).• Federal flood insurance incentives are unwise due to lack of good assessment of economics.• CZMA doesn't set clear goals (e.g., protect our shoreline: minimize footprints, maximize shoreline, maximize access). |
| Other | <ul style="list-style-type: none">• Unconstrained population growth, on limited land resources.• “Balance” of uses has failed. Need to stop thinking about either economic growth or preservation, and think instead about sustainability of all decisions.• Unprepared to deal with emerging issues like climate change. |

BRAINSTORMED SOLUTIONS

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| Incentives for Best Development Practices | <ul style="list-style-type: none">• Incentives for best development practices in preserving green space and redirecting development (smart growth). bethink about developing “conservation subdivisions.”• The CZMA should inventory available practices to develop a list of best development practices/criteria, then mandate these practices and provide incentives directly to developers (i.e. direct funding, tax benefits, or low interest loans).• The CZMA should provide a framework for what items need to be in comprehensive plans.• Visualization tools should be provided to communities and partnerships created to ensure public oversight of development.• Developers should get financial credits for conservation.• The overall objective should be to redirect growth. All federal/tax incentives need to be coordinated (coordinate with floodplain development incentives). Show financial benefits to developers and local governments.• The outcome would lead to improvements and increased density to already developed areas, preservation of green space, increased emphasis on long-range planning, and public-private partnerships.• Incentive programs would forward-looking rather than reactionary.• Need a national planning agency develop and implement an incentive program, or the CZMA could fill the role.• Examples include historic preservation credit program for conservation tax credits and some private companies' actions like Glen Cove, Long Island – a former superfund site. |
| Environmental Education | <ul style="list-style-type: none">• Show people the benefits of comprehensive land use planning for sustainable land use.• Need a change in values, a connection to place. Use Department of Education to promote/provide ocean education, teach children K-12, create a marketing campaign (a “Smokey the Bear” coastal critter, social marketing, a national “message” to spread among federal agencies, create public service announcements about coastal issues, YouTube, etc.)• Need stable source of funding, not one-year-long grants. Need a collaborative and consistent national approach to instill a sense of urgency in the children.• Use visual images to raise awareness. |
| Mandate State-Envisioning the Future of Coastal Management, May 31, 2007 Stakeholder Meeting Summary | <ul style="list-style-type: none">• The CZMA should require states to work with local governments if they want to keep their |

Local Partnerships

funding. Require that a large sum of money be spent with the local governments. Set standards the states have to meet to get this funding, then hold local governments to performance standards. Enforce this so local governments that don't meet standards must return the money. Some of the money should fund state staff time to provide technical assistance to communities – locals are often need technical information.

- Mandating state-local partnerships would build credibility of the CZMA. Plans have to be comprehensive – not just address habitat or water quality. This should be a critical component of future CZMA.
- The CZMA should provide best practices and models. Provide support and put pressure on municipalities to follow their colleagues.
- Examples found in Alabama, Louisiana, and South Carolina of locally delegated programs.. Georgia is partnering with two mayors.

Congressional Clean Coastal Communities Challenge

- Provide financial incentives to local governments for good planning. Most local governments have good intentions but are subject to the pressures of developers and others. Create a program where local governments can get substantial direct grant funds for implementing a menu of growth/land use controls/best practices. Use “congressional” in the title to build support at state and federal levels. Establish clear goals.
- These incentives have to be significant enough to counteract the strong developer incentive. Funding must be provided at the local/county level. This will increase political will through bragging rights.
- This is a financial, political and educational tool. Local Special Area Management Plans could provide examples. This could be like the Tree City USA program, or the Florida Clean Marina Program.
- The CZMA must lay out goals and objectives.
- Need to verify real results before promoting certain practices. Measurable goals must be in place, so if you show improvements against the goals, you qualify for more money. Want adaptive management.
- Provide technical assistance, model ordinances, etc to help get this started. Create sharing of information across municipalities or regionally. Create an incubator program – community enrolls, becomes eligible for more money, get more money once they show successes. There needs to be a way for communities that are developing poorly can get involved – with strong incentives and incremental steps.
- Carrots/incentives need to be ongoing and stable. Need some flexibility as all approaches will not work everywhere. Reward both remediation and prevention of degradation.
- Provide money through state agencies. Fund approaches that are already proven to work rather waiting for more research on what works – want to get started now.
- Hard to do this without national or regional goals. Most municipalities are lacking baseline data, performance metrics, and regular evaluation – may require these.
- Start by meeting with the International City/County Management Association, National Association of Counties, etc to identify meaningful incentives and needed baseline data.

Integration of the CZMA and the Clean Water Act

- The Clean Water Act (CWA) and the CZMA need to be combined or restructured, or the CZMA could be eliminated, to reduce confusion, redundancies, and management gaps. The CWA could be restructured to become a watershed management statute. Federal and state agencies (especially the Environmental Protection Agency, the National Park Service, and NOAA) need to clarify and coordinate their water management roles.
- Clarify, which agency is focused on coastal habitats, which on water quantity and quality. CZMA could focus on coastal resources, which would cover all of those.
- Land use is the key to water quality, and what is being done now is not working.
- Use 6217 of CZMA to implement Total Maximum Daily Loads.
- Want to move toward a watershed approach looking at cumulative impacts and water quality. Want to link terrestrial, coastal and ocean concerns more tightly.

Corridors

- Emphasize green space and wildlife corridors. Put habitat corridors on equal footing with transportation corridors and density allowances.
- Provide funding for acquisition of green space and set asides for developments.
- Show the financial value of green space.
- Encourage development of “green with grey” infrastructure.
- Protect Areas of Special Concern in the CZMA. Identify places at a regional level.
- Include north-south habitat corridors for climate change and east-west corridors for habitat to migrate inland with sea level rise.
- Examples of good habitat corridor efforts include Saganaugh Bay, MI, the Natural Area

	<p>Reserve System, HI (identifying great lands held by state/private owners, connecting small parcels of public lands).</p> <ul style="list-style-type: none"> • Identify areas important for corridors – set to regional standards. Make plans to protect with quantifiable short and long term goals. Use the insurance market. • In Florida and Georgia, there are development regional impact (DRI) requirements such that developers must consider regional factors.
<p>Green Development</p>	<ul style="list-style-type: none"> • The federal government should hold itself to high environmental standards before making developers do so. The government should lead, thereby increasing public demand for sustainable products and building techniques. • The demand for sustainable, eco-friendly homes and communities is huge. The government should ensure the demand can be met, making green technologies affordable.
<p>Set Clear Goals and Fund</p>	<ul style="list-style-type: none"> • Carrot and Stick: fund land use planning that is consistent with clearly established coastal sustainability goals. Consistency reviews should be implemented and loss of funds if development is inconsistent with goals. • Encourage longer range build-out and green infrastructure planning. Then give it teeth by using federal consistency and closing loopholes that have no punishment. • Start with clearly articulated national principles for what we want on the coasts. Develop goals that are clear and easy to understand. • Spread the word about financial implications of long-range vs. short-term planning. The Hollings Institute has done some of this research. • Link good planning and achieving coastal goals to receiving more funding.
<p>Tax Incentives for Regional Land Use Plans for Coastal Preservation</p>	<ul style="list-style-type: none"> • Provide tax incentives for developing and implementing regional land use plans for coastal preservation within and outside the coastal zone. • Goal is to get more people thinking and managing at a regional level. Georgia is trying to do regional watershed management. A federal act would give states and locals a backbone. • Use tax incentives for conservation easements, not just for land acquisition (which incurs ongoing costs of managing and monitoring). • Current incentives don't work (Stafford Act, National Flood Insurance Program, the Public Assistance Program).
<p>Improve Public Education</p>	<ul style="list-style-type: none"> • Assess, simplify, and improve how we educate the public, particularly elected officials and local citizens. • Learn how and why attitudes change, because current environmental education is not working. • Focus on a simple message.” • Examples: The National Park Service and the Coastal Training Program do good visitor education. The Images from the Edge program in Australia put photos up in malls. • Need a spokesperson, like Al Gore was for global warming, about coastal issues. • Need to highlight an ocean/coastal crisis for awareness and change.

WATER QUALITY

OBSTACLES

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| Economics | • Need to know the cost of poor water quality versus the benefit of good water quality. |
| Standards | • Standards are oriented toward point sources as opposed to non-point source and toward freshwater rather than estuarine and ocean water. |

BRAINSTORMED SOLUTIONS

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| Regulate Estuarine and Coastal Resources | <ul style="list-style-type: none"> • Provide federal support for regulating estuarine and coastal resources. States should have authority to adjust the standards to meet their needs. Standards set by the Clean Water Act are for freshwater and do not protect unique and important estuarine and coastal resources. Acknowledge that freshwater can be a pollutant under certain circumstances. • Set federal standards and protocol for monitoring water quality, based on the region and resources being protected (not too general). There is a lack of monitoring (states with the best monitoring still only have a small percentage of their waters infrequently monitored). • Federal government should provide incentives for states to protect resources, with ongoing, consistent monitoring of federal standards. Standardize water monitoring protocols among federal agencies to provide information on a valued resource, and show how changes in watersheds affect resources constituencies care about. This will lead to political support. • The Environmental Protection Agency and state natural resource agencies must clarify roles. • Set goals for coastal and estuarine protection and let regions decide how to achieve them. • Develop a database of brownwater habitats. |
| Incentives for Improved Waste and Water Management | <ul style="list-style-type: none"> • Provide incentives for local governments to implement practices that improve water quality by addressing waste/water management. • Create incentives and resources to offset development impacts and work with municipalities to learn what incentives would be desirable. • Develop political will by making a strong case nationally that good water quality is in the public interest and makes economic sense, and have leaders take a strong position on this. • Provide centralized education source for those driving development (chambers of commerce, developers, and local decision-makers). Explain the value of water to communities' tax base, real valuation of costs/benefits of water quality to back up policy. • Focus on water quantity and delivery (hydrology) as well as on pollutants. • Consider what the CZMA could take the lead on, and how it fits with the Clean Water Act. • An example is Boston Harbor, which was a clean up success, with funding from a federal agency or Congress to address combined sewer overflow and other discharge sources. |
| Education of Decision-makers | <ul style="list-style-type: none"> • Resources have economic, societal, and cultural values, and if people understood the costs of impairments, that might be enough for them to protect them. For example, small communities receive higher land values if they maintain pristine environment. • Bring natural resource and social science information to decision-makers. • Promote low-tech approaches (drain stencils discouraging dumping, flyers in tax envelopes). • Run booths at trade shows for contractors, road builders, councils of government. Sponsor awards. Market this "product" to the client – they want return on investment. • Be honest about who pays and who benefits, which are not always the same (if you don't keep the bay clean, the shellfishing community will die.) Lay out direct economic benefits. • Review and use the economic valuations conducted by the National Estuary Programs. • Challenges in educating decision-makers include identifying the source of contaminants, under-funding, finger pointing to identify the guilty/polluting party, and continual turnover of local decision-makers. |
| Social Marketing Campaign | <ul style="list-style-type: none"> • Hire an advertising company to convey simple, jazzy messages at a national level about the importance of clean water – raise awareness, increase public involvement, increase political will. Play the message as a public service announcement for free around the country. • Develop simple, targeted, understandable messages, should not explain the complexities of managing the coasts. Focus on what we're trying to accomplish. Show "what this means to you," like Hollings Marine Lab has done. For example: water quality relates to property values, water based recreation, etc. Give all programs names (not numbers). |

INTERGOVERNMENTAL AND INTERAGENCY COORDINATION

OBSTACLES

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| Management | <ul style="list-style-type: none"> • There isn't one agency charged with managing the coast. Competition of and misunderstanding of different agencies' missions. No shared vision or incentives to let another agency take control. • Frequent staff turnover. |
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BRAINSTORMED SOLUTIONS

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| Plan to Reduce Discrepancies | <ul style="list-style-type: none"> • Review federal, state and local mandates, identify conflicts, redundancy, and gaps, and develop a strategy for correcting these. • One objective would be to remove redundancies among the National Estuary Programs, the National Estuary Research Reserves, the Comprehensive Conservation and Management Plans, and the Coastal Zone Management Program. • Government Accounting Office should review and make recommendations for reducing discrepancies, as they did for ocean issues. They should suggest models for what body or mechanism could integrate mandates and efforts. • This could produce a federal coastal plan like the Federal Response Plan (mandated and authorized by Congress, with the Federal Emergency Management Agency providing oversight), with representatives from multiple agencies, to be applied regionally. • Should be collaborative and inter-agency. Use state and local partners to identify gaps. • Organize around particular situations of interest, for example the Everglades Task Force. • The Gulf Alliance is a model of the right collaborative idea, though it isn't inclusive enough. |
| Setting National Priorities and Goals | <ul style="list-style-type: none"> • Implement effective stakeholder process to develop a shared vision framework for the future of coastal management, including setting national priorities and goals. • NOAA should set 20-year goals for the states and then require states to develop a master plan to achieve the goals. • The state plans would lay out a place-based vision, identifying key uses for certain areas, and ensuring tangible results. • Challenges include removing state boundaries so that ecological boundaries are used. Need to focus on landscape and seascape, not political boundaries. The Southeast Aquatic Partnership is doing this. • CZMA Section 309 categories should be reviewed and updated. • Regional governance may be a starting point. Provide rewards (i.e. funding or points in competitive programs) for those that develop inter-state agreements for ecosystem management, maybe using Special Area Management Planning. |
| Integrate Data | <ul style="list-style-type: none"> • Congress should require and fund greater focus on data integration and management across all agencies and with non-government interests. • Use a clearinghouse for data systems for information on coastal management. • States and coastal managers need this information more than anyone else. • Many communities don't know about the good data that are already available. • Coastal Services Center could do outreach and technical assistance to states. • Examples include the Joint Airborne Lidar Technical Committee, National Coastal Data Development Center at Stennis, and agriculture extension schools (example of good technology transfer). |

WATERFRONT REVITALIZATION

OBSTACLES

- Public Awareness**
- Lack of public awareness about coastal management and its missions/authorities.
 - No funding for educational efforts.

- Long-Range Planning**
- Lack of long-range planning for specific coastal issues.

BRAINSTORMED SOLUTIONS

- Training**
- Establish a national framework that provides technical assistance, information about economics and environment, and training to communities, with different information for different regions. Include information on compatibility of uses of waterways in places with recreational harbors. Connect with comprehensive plans and state zoning frameworks.
 - Offer workshops for state and local governments on public access including model ordinances, such as one the Nonpoint Education for Municipal Officials program did.
 - Cannot be an unfunded mandate.
 - Could be offered via Sea Grant, Coastal Training Programs, Coastal Services Center, the National Estuary Program or The Nature Conservancy. The goal is to coordinate all groups that offer such training and have them provide a consistent message. CZMA or another agency should be “lead wrangler” to give it clout. The manager should be working with the states all the time (not in DC), for example the Brownfields Showcase Federal Coordinator.
 - CZMA should provide funding and tools to state agencies and require they get the waterfront revitalization information out to local governments.

- Protect Traditional Uses**
- Create a development tax or other incentive, and eliminate existing incentives to protect traditional, water-dependent waterfront uses. Insurance and federal funds should not be incentives for rampant growth.
 - Federal flood insurance is a big threat to traditional uses. Remove flood insurance incentives so those who build on the coast do so at their own, not taxpayers’ risk. To change this would require a very high level commitment and considerable political will.
 - The tax code should be adjusted to give fishermen credit, while taxing big houses through mortgages to fund research or sustainability. Tax code should include incentives for sustainable living practices that lead to sustainable development decisions.
 - Expand the concept of the Coastal Barrier Resources Act in limited areas to prohibit federal investments that increase risk, including to coastal hazard areas like waste/water systems.
 - This would transfer the risk from federal taxpayers to individuals, encourage smaller houses, and realign incentives in risk and hazard areas.
 - Obstacles include political infeasibility, state consistency, and scientific challenges to authority and definitions of risk, enforcement, and people not wanting financial risk.
 - Multiple agencies that address shorelines should coordinate, including the Federal Emergency Management Agency, the Army Corps of Engineers, the US Geological Survey, NOAA, and maybe private industry.

- Sediment Management**
- Provide for dredged material management on a watershed basis and promote beneficial use of dredged materials. Make watershed-level decisions about how to use dredge material.
 - Waterways must be dredged for transportation and the dredge material should be beneficially used, not wasted or dumped in the ocean. CZMA does not address this issue.
 - Develop federal policy incentives to use dredged materials to wetlands. Require the Army Corps of Engineers to better understand the effect of unsustainable agricultural practices and develop a program in the Department of Agriculture to show farmers how to prevent erosion, therefore reducing sediment and the need for future dredging.
 - CZMA must promote integrated review of coastal zone programs. There needs to be state coastal management plans, as opposed to the current programs. CZMA could identify multi-state regions and provide a framework for the states to conduct regional planning.
 - Special Area Management Plans are working on sediment management planning in some places.
 - The outcome would be regional level sediment budgets and plans for better management of development and where sediment is placed. Have state coastal programs recognize regional sand budgets. Prioritize funding. The solution lies in the states working together and making trade-offs among them, while CZMA forces them to collaborate.

CLIMATE CHANGE

OBSTACLES

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| Complexity | <ul style="list-style-type: none"> • Scientific complexity. |
| Time Scale | <ul style="list-style-type: none"> • Short term interests of people versus the long term interests of society. • The time scale is long and difficult to comprehend. |

BRAINSTORMED SOLUTIONS

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| Create a Network of Protected Habitats | <ul style="list-style-type: none"> • Consider climate change in conservation plans and build a network of protected habitats that allow for protection of species as climate zones shift. Identify and protect areas for habitat conservation and green infrastructure through acquisitions, easements and management. Protect migration corridors landwards from the sea and north-south. • Use predictive models and mapping to identify and prioritize lands. Require land acquisition programs to consider climate change, including the Coastal and Estuarine Land Conservation Program. • Require adaptation and carbon emissions reduction in state coastal management plans. • Develop carbon dioxide cap and trade programs that provide a source of funds for climate change adaptation and conservation. • Challenges include addressing existing physical barriers (e.g. highways), ownership patterns (private land), funding, and rapid sea level rise preventing important habitats from migrating (maybe overcome this by having government create marshes and other important habitat more quickly than nature could unaided). • Work with scientists to identify species at risk and where they will go. Show local governments how it will impact them. Admit to unknowns. • Priorities should include making scientific facts known, making federal and state governments respond quickly, and accelerating the shift in values and behaviors. |
| Coordination of Policy Objectives and Actions | <ul style="list-style-type: none"> • All federal and state policies should be reviewed to ensure they consider climate change actions. Remove those that don't, such as federal flood insurance subsidies, development in high risk areas, and greenhouse gas producing energy sources. Control growth in at-risk coastal areas by requiring new federal policies and states to take action to get CZMA funds. • Start with an Executive Order requiring top down review of mandates and their consideration of climate change. Relevant language is already in the CZMA, but it needs to be strengthened and enforced. Use state climate management plans for federal consistency. States should include climate action plans in their CZM plan. • This will lead to streamlined legislation, consistent actions, transferability, better intergovernmental communication and compliance. • Good negotiation skills will be critical to make this happen. • Consider this in a national defense context, and how Homeland Security is affecting transportation and aviation already. |
| Educate Local Officials on Economic Effects | <ul style="list-style-type: none"> • Provide specific information about the economic effects of not addressing climate change to encourage local government officials to make the right decisions. • Communicate science, predictive models, best management practices, state level information, priority areas for protection of habitat, green infrastructure and impacted communities (storm frequency, intensity) to state, regional and local governments. This information should be implemented locally and regionally in a network. • This will diffuse NOAA-funded research to users in need and raise awareness. • Develop a "Climate Ready Program" designation, akin to the "Tsunami Ready and Storm Ready Programs" designations administered by NOAA's National Weather Service.. • Some examples of policy frameworks for adaptive management include the Georgia state water management plan, the idea of GoogleEarth with climate impacts (scientists in Denmark are working on this), and the work Ron Carroll is doing at the University of Georgia. • Accurate prediction and understanding local (versus larger) impacts are difficult. • Government must do a good public relations campaign, fostering sustainable behavior. • The outcome would be that communities would recognize areas that might be impacted by climate changes and could prevent unwise uses in those areas. |

HABITAT

OBSTACLES

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| Habitat Loss and Property Rights | <ul style="list-style-type: none"> • Habitat is being rapidly lost and fragmented, corridors are disappearing. • All land is already owned by someone; the challenge with eminent domain and property rights is significant. |
| Valuation of Habitat | <ul style="list-style-type: none"> • There is not a common way/approach to valuing habitat: cultural, endangered species regulations, commercial value, aesthetic. • Developers and citizens are not required to pay the true cost of development. |
| Lack of Management | <ul style="list-style-type: none"> • Lack of responsibility, accountability and goals. Without goals, managers cannot produce results. The federal government thinks management is the responsibility of the state, and the state government thinks it is the responsibility of local governments. |
| Habitat Needs | <ul style="list-style-type: none"> • Every species has different habitat needs. |

BRAINSTORMED SOLUTIONS

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| Permanent Funding Source for Habitat Acquisition | <ul style="list-style-type: none"> • Funding, from something like a real estate transfer tax, should be used for acquisition, planning and management. • Fund from gas taxes, since climate change is part of the problem, or through use taxes levied on power plants or other large infrastructure, or based on ecological assessments, where there is tiered taxation based on the quality and size of the habitat lost as well as the type of development use. Funding must be consistent, it cannot fluctuate every year. • Examples include a Missouri sales tax, Florida where two cents from real estate transfer fees are put into a habitat fund, federal statutes that require states to develop tax funds then manage them such as the Water Resources Trust Funds or Underground Storage Tax programs. State sales tax and real estate transfer taxes are proven effective mechanisms. • Make a clear link between the tax and the resources. • There will need to be clear authority and comprehensive programs for managing the funds, acquiring the land, and determining who is responsible for the land once acquired. |
| Educate Local Officials on Habitat Values | <ul style="list-style-type: none"> • Educate local government decision-makers on habitat values and incorporating habitat needs into local comprehensive plans. Target decision-makers including chambers of commerce (not K-12). Let them know the benefits of protecting habitat (increased property values, storm protection, etc.). • Perhaps one federal agency consolidates coastal information at the right level of data for local decision-makings, then develops curricula with other agencies, then lets states, non-profits, and other federal agencies implement it. • Define the link between zoning, habitat and local governments. • Issue a guidance document with boiler plate information and mail out notices of its availability to municipalities. • Coordinate with trade associations like the American Planning Associations, counties, cities. • Articulate the incentive for local governments to consider habitat in their planning. Why would they protect habitat when development has such immediate economic benefits? • NOAA could fund states via the CZM program to provide money to local and regional experts to develop and present a standardized presentation / message to local governments. |
| Public-Private Partnerships | <ul style="list-style-type: none"> • Develop, expand and integrate public-private partnerships to protect habitat. • Expand a Farm Bill-like program (to protect wetlands, forested land, etc) for land owners who are not farmers. • An example is the NatureServe website for identifying priority areas and strategies. • Create a web-based registry that identifies land owners who are interested in doing something for habitat on their land. They self-identify online, then governments could approach them with solutions. This could also provide some basic education. • There is a need for a national GIS databank or website that shows habitats and values at the local level. This should include lands protected by The Nature Conservancy and others so corridors can be identified. NOAA is not the right home for this, the US Geological Survey might be, and could include NOAA and other agencies' data. |